UCRL-JC-123158 Abs Rev 1

Abstract Submitted
for the DPP96 Meeting of
The American Physical Society

Sorting Category: 5.5 (theoretical)

Investigation of Mo XIV to Mo XXIX Quasi-Continuum Emission between 65 - 80 Å as a Plasma Diagnostic M. FINKENTHAL, K.B. FOURNIER, M.J. MAY, S.P. REGAN, The Johns Hopkins University, W.H. GOLDSTEIN, Lawrence Livermore National Laboratory, J.L. TERRY, MIT Plasma Fusion Center — Spectra of low and intermediate charge states of molybdenum (Mo XVI to Mo XXIX) have been measured between 65 and 80Å using a multilayer mirror based polychromator and a grazing incidence spectrometer. The spectral content of the observed 'quasi-continuum' has been analyzed using high resolution spectra from TFR, TEXT and Alcator C-Mod tokamaks and a detailed collisional radiative model for each of the above charge states. The fractional abundance of each ion has been determined using the MIST transport code with up-to-date ionization physics. The analysis focuses on the relative contribution of the low charge states (Mo XVI to Mo XXIII) versus that of the intermediate charge states (Mo XXIV to Mo XXIX) to the observed signal. Theoretical investigation of atomic quantities such as the mean transition wavelength and total array strength of the Δn=0 transition arrays making up the 65 to 80Å emission is presented. The utility and limitations of the 'quasi-continuum' emission around 75Å, when measured with low resolution spectral diagnostics, are discussed.
Work supported in part by U.S. DoE contract W-7405-ENG-48; by LLNL.

☐ Prefer Oral Session
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Kevin Fournier
fournier2@llnl.gov
Lawrence Livermore National Laboratory

Date submitted: June 17, 1996

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